

What is claimed is:

1. A storage system for the stocking of objects in a process environment comprising:
 - 5 a storage enclosure for storing objects comprising a plurality of storage shelves, each shelf having at least one storage location;
 - a multi-axis robot mounted to the storage enclosure in an inverted orientation;
 - 10 an end effector connected to the robot suitable for grasping the objects;
 - at least one load port; and
 - a controller for controlling the robot movement;
- 15 whereby the robot transfers objects between the load port and the storage locations under control of the controller.
2. The storage system of claim 1 wherein each storage shelf further comprises a sensor to detect the presence of an object.
3. The storage system of claim 1 further comprising a process station for performing a process on the stored objects.
- 25 4. The storage system of claim 1 wherein the end effector has one additional degree of freedom.
5. The storage system of claim 1 wherein the controller executes a teaching sequence to map the location of features within the storage enclosure.
- 30 6. A storage system for the stocking of substrate carrier pods in a process environment comprising:

- a storage enclosure for storing objects comprising a plurality of storage shelves, each shelf having at least one storage location;
- 5 a multi-axis robot attached in an inverted orientation to a linear sliding stage, the linear sliding stage attached to the storage enclosure;
- an end effector suitable for grasping the objects connected to the robot and having at least one axis of motion;
- 10 at least one load port; and
- a controller for controlling the robot movement;
- whereby the robot transfers objects between the load port and the storage locations under control of
- 15 the controller.

7. The storage system of claim 6 further comprising a process station for performing a process on the substrate carrier pods.

20 8. The storage system of claim 6 further comprising a sliding door with a first position substantially covering the load port and a second position allowing access to the load port.

9. The storage system of claim 6 further comprising:

25 an extended storage section attached to the storage enclosure;

and wherein the linear sliding stage allows the multi-axis robot to travel linearly through the storage system including the extended storage section.

30 whereby the extended storage section provides additional storage capacity for the storage system.